

REMARKS

The Examiner's Action mailed on June 29, 2001 has been received and its contents carefully considered. Additionally attached to this Amendment is a Petition for Extension of Time, extending the period for response to October 29, 2001.

In this Amendment, Applicants have editorially amended the specification and amended claims 1, 2, 6, 7, 8 and 11. Further, claims 4, 5, 10 and 12-16 have been canceled. Claims 1 and 7 are the independent claims. Claims 1-3, 6-9 and 11 remain pending in the application. For at least the following reasons, it is submitted that this application is in condition for allowance.

The Examiner has rejected various ones of the claims as being indefinite. In particular, the Examiner has stated that the reference to "the first, second, and third industry standard specifications" makes the claims inherently vague. Without acquiescing to the properness of this rejection, the claims have been amended to eliminate reference to the first, second, and third industry standards, and now simply recite either the FlexATX specification, the MicroATX specification or the ATX specification. These specifications are not subject to change and/or revision, and it is thus submitted that the claims which utilize these terms comply with all official provisions. It is requested that this rejection be withdrawn.

The Examiner has rejected claims 1-16 as being anticipated by *Schuck* (U.S.P. 4,400,049). Because claims 4, 5, 10 and 12-16 have been canceled, Applicants will treat this rejection as pertaining only to the pending claims. It is submitted that the claims are patentably distinguishable over this reference for at least the following reasons.

Applicants' independent claim 1 is directed to a motherboard assembly that includes a motherboard which complies with one of a FlexATX specification and a MicroATX specification. The motherboard assembly further includes an expansion board that has at least one slot. The expansion board is detachably connected to the motherboard. When the expansion board is connected to the motherboard, the motherboard and the expansion board are arranged in coplanar fashion so that the motherboard assembly complies with either the MicroATX specification or the ATX specification when the motherboard complies with the FlexATX specification, or complies with the ATX specification when the motherboard complies with the MicroATX specification. As disclosed by Applicants' specification, this allows a motherboard that complies with one specification to be easily adapted to comply with a second specification, so that the motherboard can be fixed into a case that is adapted to receive a motherboard of the second specification. This increases the compatibility of the motherboards, facilitating assembly and decreasing the cost of assembly (see, page 8, lines 11-22, for example).

Schuck discloses a connector for interconnecting circuit boards in which various circuit boards are disposed in an edge-to-edge manner and are connected together using the connector 10, such as shown in Figure 5. This reference also discloses attaching circuit boards 46 to the slots of a back plane 54 using a conventional connector 52. However, there is absolutely no disclosure or suggestion from this reference that the motherboard complies with one of a FlexATX specification and a MicroATX specification as recited within claim 1. In fact, there is no disclosure of suggestion of the configuration of the motherboard at all. Moreover, there is no disclosure or suggestion

from this reference that the motherboard assembly complies with either a MicroATX specification and an ATX specification when the motherboard complies with the FlexATX specification, or that the motherboard assembly complies with the ATX specification when the motherboard complies with a MicroATX specification, as recited in claim 1. Although the Examiner's Action states, with respect to claims 10, 15 and 16, that the reference discloses the FlexATX specification, the MicroATX specification and the ATX specification, Applicants have been unable to find any such disclosure to support this assertion. In fact, the object of the invention disclosed by this patent is not in any way directed to providing a motherboard assembly which allows a motherboard of a first specification to be used in a case that is adapted to receive a motherboard having a second specification. Instead, this disclosure is only directed to an improved connector 10 to allow various circuit boards to be connected together. As such, it is submitted that Applicants' independent claim 1 and the claims dependent therefrom, are *prima facie* patentably distinguishable over this cited reference.

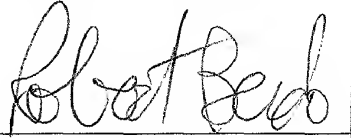
Moreover, Applicants' independent claim 7 is directed to a motherboard assembly that selectively complies with one of a FlexATX specification, a MicroATX specification, and an ATX specification, with the motherboard assembly having a motherboard having a FlexATX specification and first and second expansion boards. When the first expansion board is connected to the motherboard, the motherboard assembly has the MicroATX specification, and when the first and second expansion boards are both connected to the motherboard, the motherboard assembly has the ATX specification. As noted above, the cited reference does not disclose or otherwise suggest a motherboard assembly having any of the specifications recited within claim 7. As such,

the arrangement disclosed by the cited reference would not achieve the objectives obtainable by utilizing Applicants' claimed invention. Therefore, it is submitted that Applicants' independent claim 7 and the claims dependent therefrom are *prima facie* patentably distinguishable over the cited reference, and it is requested that these claims be allowed and that these rejections be withdrawn.

It is submitted that this application is in condition for allowance. Such action, and the passing of this case to issue are requested.

Should the Examiner feel that a conference would help to expedite the prosecution of the application, the Examiner is hereby invited to contact the undersigned counsel to arrange for such an interview.

Respectfully submitted,



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October 22, 2001
Date

RHB:vjb:tz

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Please delete the paragraph on page 2, lines 1-9, and replace it with the following paragraph:

-- Referring to FIG. 1, the dimension difference between the motherboards respectively complying with the ATX, MicroATX and FlexATX specifications is shown. As shown in FIG. 1, the dimension of the motherboard complying with the FlexATX specification is the [least] smallest (as the area marked FlexATX shown in FIG. 1), the dimension of the motherboard complying with the MicroATX specification is the next largest (as the area including the area marked FlexATX and the area with oblique lines shown in FIG. 1), and the dimension of the motherboard complying with the ATX specification is the largest (as the area including the area marked FlexATX, the area with oblique lines and area with cross lines).--

Please delete the paragraph on Page 2, lines 10-22, and replace it with the following paragraph:

--Also shown in FIG. 1, the length L_{ATX} and width W_{ATX} of the motherboard of the ATX specification are the longest and the widest, respectively. The length L_{Micro} of the motherboard of the MicroATX specification is shorter than that of the motherboard of the ATX specification, and the width of the motherboard of the MicroATX specification is the same as that of the motherboard of the ATX specification. The length L_{Flex} of the motherboard of the FlexATX specification is shorter than that of the motherboard of the

MicroATX specification, and the width W_{Flex} of the motherboard of the FlexATX specification is more narrow than those of the motherboards of the ATX and MicroATX specifications. In particular, the dimension of the motherboard complying with the FlexATX specification is variable. That is the length of the motherboard of the FlexATX specification can be reduced more as desired, and the width of the motherboard of the FlexATX specification can be [extend] extended to be the same as that of the motherboard of the ATX specification.--

Please delete the paragraph beginning on page 2, line 23, and bridging page 3, lines 1-3, and replace it with the following paragraph:

--In addition, the aforesaid [specifications of] motherboards also require the position of mounting holes [of one] on the motherboard, where the mounting holes of the motherboard are provided for mounting the motherboard on the inner wall of a matched case. As shown in FIG. 1, white circles denote the position of mounting holes formed on the motherboard complying with the ATX or MicroATX specifications, and black circles denote the position of mounting holes formed on the motherboard complying with the FlexATX specification. Thereby, the motherboard of the FlexATX specification can be mounted within a case matching the motherboard of the MicroATX or ATX specifications, and the motherboard of the MicroATX specification can be arranged within a case matching the motherboard of the ATX specification.--

Please delete the paragraph on page 3, lines 4-11, and replace it with the following paragraph.

--However, the trend of desktop computers towards the compact also brings about a negative effect, i.e., useable I/O slots provided by the compact motherboard are decreased relatively. [On aspect of user, when one] When a user needs more slots [more] than those provided by the compact motherboard to install expansion devices such as interface cards, he inevitably requires the assistance of an expansion apparatus for increasing the I/O slots of the compact motherboard. Prior arts regarding type, connecting manner and connecting position of an expansion apparatus for providing a motherboard with slots will be described as follows.--

Please delete the paragraph on page 3, lines 12-25, and replace it with the following paragraph.

--Referring to FIG. 2, according to Sony's PCI-Riser standard specification, a motherboard 21 and an expansion board 22 of a riser type [for] is provided on the motherboard 21 [with] to provide additional slots 222[are shown]. The connection relationship between the motherboard 21 and the expansion board 22 is also shown in FIG. 2. The motherboard 21 of the PCI-Riser specification is a compact motherboard. Thus, only one slot 211 is provided on the motherboard 21. According to the PCI-Riser specification, when the motherboard 21 requires additional slots, the expansion board 22 [thereof] is inserted into the slot 211 initially provided on the motherboard 21 via a bus 221 of a golden-finger type to provide the motherboard 21 with the additional slots 222. Obviously, when the motherboard 21 and the expansion board 22 [connect] are connected together, the slot 211 provided on the motherboard 21 is inevitably sacrificed so that the slot 211 [can not] cannot provide for the insertion of an interface card. Besides, note that

the motherboard 21 and the expansion board 22 are disposed perpendicularly from each other when they connect together.--

Please delete the paragraph beginning on page 3, line 26, and bridging page 4, line 1.

--Similarly, according to Intel's FlexATX specification, when the motherboard of the FlexATX specification requires additional slots, an expansion board of a riser type can be inserted into a slot initially provided on the motherboard to provide the motherboard with the additional slots.--

Please delete the paragraph on page 4, lines 2-11, and replace it with the following paragraph.

-- Referring to FIG. 3, according to Microsoft's NLX standard specification, [a motherboard 31 and] an expansion board 32 [for] is provided on the motherboard 31 to provide for [with] additional slots 322 [are shown]. The connection relationship between the motherboard 31 and the expansion board 32 is also shown in FIG. 3. The motherboard 31 of the NLX specification is a compact motherboard. The motherboard 31 is provided with a bus 311 of a golden-finger type at an edge of itself. According to the NLX specification, when the motherboard 31 requires additional slots, the expansion board 32 is connected to the bus 311 via a connector 321 of itself. Note that the motherboard 31 and the expansion board 32 are disposed perpendicularly from each other when they connect together.--

Please delete the paragraph on page 8, lines 11-22, and replace it with the following paragraph.

--The present invention [is to] provides a motherboard complying with a first industry specification and an expansion board for providing the motherboard with at least one slot. In particular, the expansion board is capable of connecting in parallel with the motherboard so as to assemble into a motherboard assembly complying with a second industry standard specification. Whether or not the motherboard connects with the expansion board, the motherboard (or the motherboard assembly) can be installed within a case matching a motherboard of the second specification and, thereby, the advantage of the compatibility between the motherboards of the first and second specifications can be manifested. It is obvious that this approach gives one user with much convenience when he needs to buy or [expanse] expand a computer system. This approach also gives the motherboard with much convenience on manufacture and design such that the [manufacture] manufacturing cost of the motherboard can be reduced.--

Please delete the paragraph on page 10, lines 5-7, and replace it with the following paragraph.

--In an embodiment, the first connection device 411 is a bus of a golden-finger type, and the second connection device 421 is a female connector adapted to the bus of the golden-finger type, as shown in FIG. 4.--

Please delete the paragraph on page 10, lines 11-13, and replace it with the following paragraph.

--In another embodiment, the second connection device 421 is a male connector, and the first connection device 411 is a female connector adapted to the aforesaid male connector.--

Please delete the paragraph beginning on page 10, line 18, and bridging page 11, lines 1-16, and replace it with the following paragraph.

--The invention [is] also [to] provides a motherboard complying with a first industry standard specification and an expansion board for providing the motherboard with at least one slot. In particular, an interface specification, which one of the slots provided by the expansion board follows, is not followed by the motherboard and, thereby, the expansion board can increase the expansibility of the motherboard. To achieve the purpose, in an embodiment, the first connection device 411 and the second connection device 421 include a first bus, respectively. The slots 422 includes a slot following a second bus. The expansion board 42 further includes a conversion device (not shown) for performing the conversion between the first bus and the second bus. For example, the first bus is the PCI bus, the second bus is the ISA, and thus the conversion device is for performing the conversion between the PCI bus and the ISA bus. This approach can make the connection of the motherboard 41 to the expansion devices with the buses that the motherboard 41 does not follow. In addition, the buses designed into the first and connection devices (411 and 421) can be decreased to reduce the manufacture cost of the motherboard 41.--

Please delete the paragraph on page 12, lines 17-20, and replace it with the following paragraph.

--In an embodiment, the first connection device 511 and the third connection device 523 are a bus of a golden-finger type, respectively. The second connection device 521 and the fourth connection device 531 are a female connector adapted to the bus of the golden-finger type, respectively, as shown in FIG. 5.--

Please delete the paragraph beginning on page 13, line 23, and bridging page 14, lines 1-4, and replace it with the following paragraph.

--3. the motherboard and the expansion board, according to the invention, can be designed and manufactured into the motherboard assembly and, thereby, only the motherboard needs to be modified without the need to vary the configuration of the expansion board when a motherboard device on the motherboard needs to be upgraded;--

IN THE CLAIMS:

Please cancel claims 4, 5, 10 and 12-16, without prejudice or disclaimer to the subject matter recited therein.

Please amend the claims as follows:

1.(Amended) A motherboard assembly, comprising:

a motherboard complying with [a first industry standard specification] one of a FlexATX specification and a MicroATX specification; and

an expansion board, detachably connected to said motherboard, for providing at least one slot;

wherein when said expansion board is connected to said motherboard, said motherboard and said expansion board are arranged in a coplanar fashion so that said motherboard assembly complies with [a second industry standard specification] one of the MicroATX specification and an ATX specification when said motherboard complies with the FlexATX specification, and complies with the ATX specification when said motherboard complies with the MicroATX specification.

2. (Amended) The motherboard assembly of claim 1, wherein said motherboard, at a first edge thereof, is provided with a first connection device, and said expansion board, at a second edge thereof, is provided with a second connection device for making connection thereof to the first connection device.

6. (Amended) The motherboard assembly of claim [3]2, wherein the first connection device and second connection device comprise a first bus, respectively, the at least one slot comprises a slot of a second bus, and said expansion board further comprises a conversion means for performing a conversion between the first bus and a second bus.

7. (Amended) A motherboard assembly selectively complying with [a first industry standard specification, a second industry standard specification and a third industry standard specification] one of a FlexATX specification, a MicroATX specification and an ATX specification, said motherboard assembly comprising:

a motherboard [complying with a first industry standard specification]having the FlexATX specification;

a first expansion board, detachably connected to said motherboard, for providing at least one first slot, wherein when said first expansion board is connected to said motherboard, said motherboard assembly [complies with the second industry standard specification] has the MicroATX specification; and

a second expansion board, detachably connected to said first expansion board, for providing at least one second slot, wherein when said second expansion board is connected to said first expansion board and said first expansion board is connected to said motherboard at the same time, said motherboard, said first expansion board and said second expansion board are arranged in a coplanar fashion, and said motherboard assembly [complies with the third industry standard specification] has the ATX specification.

8. (Amended) The motherboard assembly of claim 7, wherein said motherboard, at a first edge thereof, is provided with a first connection device, and said first expansion board, at a second edge thereof, is provided with a second connection device for making connection thereof to the first connection device, and wherein said first expansion board, at a third edge thereof, is provided with a third connection device on [a] the third edge thereof, and said second expansion board, at a fourth edge thereof, is provided with a fourth connection device for making connection thereof to the third connection device.

11. (Amended) The motherboard assembly of claim [9] 8, wherein the first connection device and second connection device comprise a first bus, respectively, the at least one first slot comprises a slot of a second bus, and said first expansion board further comprises a conversion means for performing a conversion between the first bus and a second bus.